CLAIMS

We Claim:

1. A computer-implemented method of representing job candidate data for a job candidate, the method comprising:

receiving the job candidate data;

extracting one or more concepts from the job candidate data; and

storing data indicating the concepts as a representation of the job candidate data.

2. The method of claim 1 wherein the extracting is performed via an ontology.

3. The method of claim 2 wherein active entries in the ontology are limited to those approved by a human reviewer.

4. The method of claim 1 wherein the extracting is performed via detecting a synonym of a concept in the job candidate data.

5. The method of claim 1 further comprising:

assigning at least one of the concepts an associated concept score indicating a level of experience for at least one of the concepts.

6. The method of claim 5 further comprising:

receiving other job candidate data for a plurality of other job candidates;

extracting a plurality of concepts from the other job candidate data;

assigning the concepts within the other job candidate data associated concept scores representing experience for the plurality of concepts; and

searching within an *n*-dimensional space for one or more job candidates, wherein the job candidates are represented in the *n*-dimensional space via the concept scores.

7. The method of claim 6 wherein *n* is greater than 100,000.

8. The method of claim 6 wherein *n* is greater than 1,000,000.

9. The method of claim 6 wherein *n* is greater than 3,000,000.

10. The method of claim 5 wherein the concept score is calculated according to the following:

(length of service * recency factor) + related job skills.

11. The method of claim 5 wherein the concept score is increased based on reputation of an organization at which an associated concept was applied according to the job candidate data.

12. The method of claim 5 further comprising:

assigning a special-purpose concept with a score representing a geographical location of the job candidate.

13. The method of claim 1 wherein at least one parent concept is extracted based on detection of a child concept related to the parent concept in a hierarchical concept arrangement.

14. The method of claim 1 wherein at least one parent concept is extracted based on detection of multiple child concepts related to the parent concept in a hierarchical concept arrangement;

wherein a confidence score for the parent concept is calculated based on accumulation of confidence scores for the multiple child concepts.

15. The method of claim 1 wherein the job candidate data comprises a resume of the job candidate.

16. The method of claim 1 wherein the job candidate data comprises assessment results of the job candidate.

17. One or more computer-readable media comprising computer-executable instructions for performing the method of claim 1.

18. A method for finding a plurality of job candidates suitable for a job requisition, the method comprising:

via at least one ontology-based extractor and at least one ontology-independent extractor, conceptualizing job candidate data for a plurality of job candidates to generate conceptualized job candidate data, wherein the conceptualized job candidate data comprises, for each job candidate, a set of concept scores defining a respective point in an *n*-dimensional concept space, the concept scores including concept scores for at least one job title, and at least one job skill for the job candidate, whereby the job candidates are represented by job candidate points in the *n*-dimensional concept space;

receiving desired job candidate criteria, wherein the desired job candidate criteria comprises a desired job candidate criteria point in the *n*-dimensional concept space;

finding *m* job candidate points closest to the job candidate criteria point in the *n*-dimensional concept space; and

in a graphical user interface, indicating job candidates associated with the *m* job candidate points as job candidates matching the desired job candidate criteria.

19. A software system encoded on one or more computer-readable media, the software system comprising:

a conceptualizer, wherein the conceptualizer is operable to receive job candidate data for a job candidate and extract one or more human resource-related concepts therefrom.

20. A software system encoded on one or more computer-readable media, the software system comprising:

means for conceptualizing, wherein the means for conceptualizing is operable to receive job candidate data for a job candidate and extract one or more human resource-related concepts therefrom.

21. A computer-implemented method of processing a proposed term for inclusion in an ontology, the method comprising:

storing a context of the proposed term for a plurality of job candidates, wherein the context is determined via job candidate data for the respective job candidates; and

based on the context of the term, suggesting a position for the proposed term as a concept within an ontology.

22. The method of claim 21 further comprising:

identifying the proposed term within the job candidate data for the plurality of job candidates by performing a method comprising the following:

storing terms extracted by one or more rule-based heuristic term extractors for the job candidate data for the plurality of job candidates; and

identifying at least one, frequently-found of the terms as a proposed term.

23. The method of claim 22 wherein the rule-based heuristic term extractors comprise a heuristic job skill extractor.

24. The method of claim 21 wherein the position is based at least on co-occurrence of the proposed term in job skills lists identified by one of the rule-based heuristic term extractors.

25. The method of claim 21 wherein the position is based at least on an analysis of the hierarchical relationship within the hierarchy of terms found in the context of the proposed term already appearing in the ontology.

26. The method of claim 21 wherein the context of the term is defined as words appearing proximate the proposed term in job candidate data.

27. The method of claim 26 wherein the context of the term is defined as the *n* nearest words appearing proximate the proposed term in job candidate data.

28. One or more computer-readable media comprising computer-executable instructions for performing the method of claim 22.

29. A job candidate search software system comprising:

at least one ontology;

at least one ontology-independent term extractor operable to extract terms from job candidate data; and

a learning system operable to identify at least one term extracted by the term extractor for a plurality of job candidates to suggest a location for the term within the ontology.

30. A computer-implemented method of associating a score with a concept extracted from electronically stored job candidate data comprising at least a portion of a resume for a job candidate, the method comprising:

determining an experience level with respect to the concept for the candidate based at least on the job candidate data; and

storing a score indicating the experience level with respect to the concept for the candidate.

31. The method of claim 30 wherein the determining is performed with reference to a length of service with respect to the concept based at least upon analysis of the job candidate data.

32. The method of claim 30 wherein the determining is performed with reference to recency of the concept with respect to the concept based at least upon analysis of the job candidate data.

33. The method of claim 30 wherein the determining is performed with reference to identification of job skills identified in the job candidate data and related in an ontology to the concept.

34. The method of claim 30 wherein the experience level is determined based on the following calculation:

(length of service * recency factor) + related job skills.

35. The method of claim 30 wherein the recency factor is calculated according to the following:

k / (number of years).

36. One or more computer-readable media comprising computer-executable instructions for performing the method of claim 30.

37. A job candidate search software system comprising:

means for extracting a plurality of concepts from job candidate data; and

means for calculating a concept score generally indicating a level of experience for the concept based on the job candidate data.

38. A computer-implemented method for extracting concepts from job candidate data, the method comprising:

receiving the job candidate data;

extracting one or more concepts via application of rules to the job candidate data by a heuristic term extractor; and

storing a representation of the concepts.

39. The method of claim 38 wherein the method is performed by a system having one or more ontologies, and the extracting extracts a concept not appearing in the ontologies as a concept.

40. The method of claim 38 wherein the extracting extracts a concept not before encountered.

41. The method of claim 38 wherein the heuristic term extractor extracts at least one job skill in the job candidate data as a concept.

42. The method of claim 38 wherein the heuristic term extractor extracts concepts by identifying a portion of the job candidate data as a job skills list and extracts at least one job skill in the job skills list as a concept.

43. The method of claim 42 wherein the heuristic term extractor identifies job skills lists at least via detection of commas therein.

44. The method of claim 42 wherein the heuristic term extractor identifies a possible job skills list at least based on the form of the possible job skills list.

45. The method of claim 42 wherein the heuristic term extractor identifies a possible job skills list as a job skills list at least by detecting in the possible job skills list one or more job skills already classified in an ontology as job skill.

46. The method of claim 42 wherein the heuristic term extractor identifies a possible job skills list as a job skills list at least by detecting one or more keywords in the possible job skills list.

47. The method of claim 38 wherein the heuristic term extractor extracts at least one job title in the job candidate data as a concept.

48. The method of claim 47 wherein the heuristic term extractor removes one or more common stopwords from the job title in the job candidate data.

49. One or more computer-readable media comprising computer-executable instructions for performing the method of claim 38.

50. The method of claim 38 wherein the heuristic term extractor extracts at least one job title in the job candidate data as a concept.

51. The method of claim 38 wherein the heuristic term extractor extracts a management experience concept from the job candidate data.

52. The method of claim 51 wherein management experience is extracted based at least on a job title extracted from the job candidate data.

53. The method of claim 51 wherein management experience is extracted based at least on the presence of management-indicative key words within the job candidate data.

54. A computer-implemented method of finding job candidates matching desired job criteria, the method comprising:

matching the desired criteria to one or more matched job candidates;

indicating the matched job candidates;

wherein the matching comprises considering conceptualized job candidate data for the candidates and the results of candidate assessments.

55. The method of claim 54 wherein the results of candidate assessments are encoded as a special purpose concept.

56. The method of claim 54 wherein the results of candidate assessments comprise data indicating results of questionnaires completed by the applicants.

57. The method of claim 56 wherein the results of questionnaires completed by the applicants are encoded as special purpose concepts.

58. One or more computer-readable media comprising computer-executable instructions for performing the method of claim 54.

59. A computer-implemented method of presenting information about a proposed job candidate management, the method comprising:

presenting a summary of information for the candidate; and

presenting a rating indicating suitability of the job candidate for a management position, wherein the suitability is based on job candidate data comprising an electronic version of a resume of the proposed job candidate.

60. A computer-implemented method of identifying a job candidate as exhibiting changing jobs frequently, the method comprising:

counting the number of positions the job candidate has held over a certain period of time based at least on job candidate data;

determining whether the number of positions held over the certain period of time meets a threshold; and

responsive to determining the number of positions meets the threshold, designating the job candidate as changing jobs frequently.

61. A computer-implemented method of calculating a job candidate's likelihood of entering a new position, the method comprising:

determining a present position of the job candidate; and

finding the present position of the job candidate in data indicating a subsequent position for other job candidates having held the present position.

62. The method of claim 61 wherein the data indicating a subsequent position for other job candidates indicates tenure of the other job candidates for the present position.

63. The method of claim 61 wherein

the data indicating a subsequent position for other job candidates indicates positions via entries found in an ontology; and

the determining determines the present position via the ontology.

64. A method of representing job candidate data for a job candidate, the method comprising:

converting the job candidate data into a representation in an *n*-dimensional concept space; and

storing the representation in the *n*-dimensional concept space.

65. The method of claim 64 wherein the representation comprises a point having coordinates for a plurality of axes associated with a plurality of concepts, wherein the coordinates of the point indicate concept scores for concepts associated with the axes.

66. The method of claim 65 wherein at least one of the concept scores represents expertise in one of the concepts based on analysis of the job candidate data.

67. A method of finding a job candidate suitable to fill a position, the method comprising:

receiving characteristics desired to fill the position;

matching the characteristics desired to fill the position to a set of a plurality of job candidates via an *n*-dimensional concept space.

68. The method of claim 67 wherein

the plurality of job candidates are represented by a plurality of job candidate representations in the *n*-dimensional concept space;

the characteristics desired to fill the position are represented by a point in the *n*-dimensional concept space; and

the matching is performed via a distance function to find the m job candidate representations closest to the point in the *n*-dimensional concept space.

69. A method of representing information of a job candidate, the method comprising:

converting the information of the job candidate into a conceptual representation of the job candidate; and

storing the conceptual representation of the job candidate.

70. The method of claim 69 wherein the information comprises a resume of the job candidate.

71. In one or more computer readable media, a data structure representing a plurality of job candidates, the data structure comprising:

a plurality of entries representing the respective job candidates, wherein the entries comprise concepts and associated concept scores for the respective job candidates.

72. The method of claim 71 wherein the entries are constructed via an ontology having knowledge regarding concepts represented.